FORM PTO-1449 (REV. 4-01)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 690116.401	APPLICATION NO. 10/684,141
	INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	APPLICANT Mitsuru Furusawa	
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U.S. PATENT DOCUMENTS

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FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	TRANSLATION YES	TRANSLATION NO
	AB					

OTHER PRIOR ART *(Including Author, Title, Date, Pertinent Pages, Etc.)*

MB	AC		Aoki, K. et al., "Promotion of Evolution by Intracellular Coexistence of Mutator and Normal DNA Polymerases," *J. Theor. Biol. 209*:213-222, 2001.
MB	AD		Araki, H. et al., "Cloning DPB3, the Gene Encoding the Third Subunit of DNA Polymerase II of Saccharomyces Cerevisiae," Nucleic Acids Research 19(18):4867-4872, 1991.
MB	AE		Boulet, A. et al., "Structure and Function of the Saccharomyces Cerevisiae CDC2 Gene Encoding the Large Subunit of DNA Polymerase III," *The EMBO Journal 8*(6):1849-1854, 1989.
MB	AF		Doi, H. et al., "Evolution is Promoted by Asymmetrical Mutations in DNA Replication – Genetic Algorithm with Double-Stranded DNA - ," *Fujitsu Sci. Tech. 32*(2):248-255, December 1996.
MB	AG		Eigen, M., "Selforganization of Matter and the Evolution of Biological Macromolecules," *Die Naturwissenschaften 58*:465-523, 1971.
MB	AH		Eigen, M., "The Hypercycle. A Principle of Natural Self-Organization," *Die Naturwissenschaften 64*:541-565, 1977.
MB	AI		Eshleman, J. et al., "Increased Mutation Rate at the *hprt* Locus Accompanies Microsatellite Instability in Colon Cancer," *Oncogene 10*:33-37, 1995.
MB	AJ		Fancino, P. et al., "Asymmetries Generated by Transcription-Coupled Repair in Enterobacterial Genes," *Science 272*:107-112, 1996.
MB	AK		Furusawa, M. et al., "Promotion of Evolution: Disparity in the Frequency of Strand-Specific Misreading Between the Lagging and Leading DNA Strands Enhances Disproportionate Accumulation of Mutations," *J. Theor. Biol. 157*:127-133, 1992.
MB	AL		Furusawa, M. et al., "Asymmetrical DNA Replication Promotes Evolution: Disparity Theory of Evolution," *Genetica 102/103*:333-347, 1998.

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FORM PTO-1449 (REV. 2-00)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 690116.401	APPLICATION NO. 10/684,141
	INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	APPLICANT Mitsuru Furusawa	
		FILING DATE October 10, 2003	GROUP ART UNIT 1633

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		DOCUMENT NUMBER	DATE	COUNTRY	TRANSLATION YES	TRANSLATION NO
	BB					

OTHER PRIOR ART *(Including Author, Title, Date, Pertinent Pages, Etc.)*

MB	BC		Fijalkowska, I. et al., "Unequal Fidelity of Leading Strand and Lagging Strand DNA Replication on the *Escherichia Coli* Chromosome," *Proc. Natl. Acad. Sci. USA 95*:10020-10025, August 1998.
MB	BD		Gawel, D. et al., "Asymmetry of Frameshift Mutagenesis During Leading and Lagging-Strand Replication in *Escherichia Coli*," *Mutation Research 501*:129-136, 2002.
MB	BE		Goldsby, R. et al., "High Incidence of Epithelial Cancers in Mice Deficient for DNA Polymerase δ Proofreading," *Proc. Natl. Acad. Sci. 99*(24):15560-15565, November 2002.
MB	BF		Iwaki, T. et al., " Preferential Replication-Dependent Mutagenesis in the Lagging DNA Strand in *Escherichia Coli*," *Mol. Gen. Genet. 251*:657-664, 1996.
MB	BG		Kang, S. et al., "Expansion and Deletion of CTG Repeats form Human Disease Genes are Determined by the Direction of Replication in E. Coli," *Nature Genetics 10*, 213-218, June 1995.
MB	BH		Kunkel, T. et al., "Exonucleolytic Proofreading by Calf Thymus DNA Polymerase δ," *Proc. Natl. Acad. Sci. USA 84*:4865-4869, July 1987.
MB	BI		Maliszewska-Tkaczyk, M. et al., "SOS Mutator Activity: Unequal Mutagenesis on Leading and Lagging Strands," *Proc. Natl. Acad. Sci. USA 97*(23):12678-12683, November 2000.
MB	BJ		Morrison, A. et al., "The 3'→5' Exonucleases of Both DNA Polymerase δ and ε Participate in Correcting Errors of DNA Replication in *Saccharomyces Cerevisiae*," *Mol. Gen. Genet. 242*:289-296, 1994.
MB	BK		Morrison, A. et al., "A Third Essential DNA Polymerase in S. Cerevisiae," *Cell 62*:1143-1151, September 1990.
MB	BL		Ohya, T. et al., "Structure and Function of the Fourth Subunit(Dpb4p) of DNA Polymerase ε in Saccharomyces Cerevisiae," *Nucleic Acids Research 28*(20):3846-3852, 2000.

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FORM PTO-1449 (REV. 7-80)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 690116.401	APPLICATION NO. 10/684,141
	INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	APPLICANT Mitsuru Furusawa	
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	CB					

OTHER PRIOR ART *(Including Author, Title, Date, Pertinent Pages, Etc.)*

MB	CC		Roberts, J. et al., "Fidelity of a Human Cell DNA Replication Complex," *Proc. Natl. Acad. Sci. USA 85*:7064-7068, October 1988.
MB	CD		Robert, J. et al., "Frameshift Fidelity During Replication of Double-Stranded DNA in HeLa Cell Extracts," *Biochemistry 32*:4083-4089, 1993.
MB	CE		Robert, J. et al., "Exonucleolytic Proofreading of Leading and Lagging Strand DNA Replication Errors," *Proc. Natl. Acad. Sci. USA 88*:3465-3469, April 1991.
MB	CF		Robert, J. et al., "Mispair-, Site-, and Strand-Specific Error Rates During Simian Virus 40 Origin-Dependent Replication *in Vitro* with Excess Deoythymidine Triphosphate," *The Journal of Biological Chemistry 269*(3):1711-1717, January 1994.
MB	CG		Rosche, W. et al., "Differential DNA Secondary Structure-Mediated Deletion Mutation in the Leading and Lagging Strands," *Journal of Bacteriology 177*(15):4385-4391, August 1995.
MB	CH		Tanabe, K. et al., "A Conspicuous Adaptability to Antibiotics in the Escherichia Coli Mutator Strain, *DNAQ49*," *FEMS Microbiology Letters 176*:191-196, 1999.
MB	CI		Trinh, T. et al., " Preferential DNA Secondary Structure Mutagenesis in the Lagging Strand of Replication in E. Coli," *Nature 352*:544-547, August 1991.
MB	CJ		Veaute, X. et al., "Greater Susceptibility to Mutations in Lagging Strand of DNA Replication in *Escherichia Coli* than in Leading Strand," *Science 261*:598-600, July 1993.
MB	CK		Wada, K-N. et al., "A Neo-Darwinian Algorithm: Asymmetrical Mutations due to Semiconservative DNA-Type Replication Promote Evolution," Proc. Natl. Acad. Sci. USA 90:11934-11938, December 1993.
MB	CL		Weston-Hafer, K. et al., "Deletions in Plasmid pBR322: Replication Slippage Involving Leading and Lagging Strands," *Genetics 127*:649-655, April 1991.

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FORM PTO-1449 (REV. 2-32)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 690116.401	APPLICATION NO. 10/684,141
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	DH					
	DI					
	DJ					
	DK					

OTHER PRIOR ART *(Including Author, Title, Date, Pertinent Pages, Etc.)*

MB	DL		Wu, C-I. et al., "Inequality in Mutation Rates of the Two Strands of DNA," *Nature 327*:169-170, May 1987.
	DM		Furusawa, M., *Iden*, pp. 148-158, July 1996.
	DN		Furusawa, M., *Iden 8*:92-96, March 2001.
	DO		Furusawa, M.,"Asymmetrical DNA Replication Promotes Evolution," *Pathological Physiology 14*:675-681, September 1995.
	DP		Furusawa, M., *KAST Report 7*(1):20-25, 1995.
	DQ		Furusawa, M., *BioHistory*, pp. 012-013, November 2001.
	DR		Furusawa, M., Chemistry and Biology 34(2):78-79, 1996.

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FORM PTO-1449 (REV.7-80)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 690116.401	APPLICATION NO. 10/684,141
INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		APPLICANT Mitsuru Furusawa	
		FILING DATE October 10, 2003	GROUP ART UNIT ~~1045~~ 1633

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FOREIGN PATENT DOCUMENTS

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MB	AH	08-163986	06/25/96	JP (+ Abstract in English)		
MB	AI	08-163987	06/25/96	JP (+ Abstract in English)		
MB	AJ	09-023882	01/28/97	JP (+ Abstract in English)		
MB	AK	WO 00/28015	05/18/00	WIPO		
MB	AL	1 054 057 A1	11/22/00	EP		

OTHER PRIOR ART *(Including Author, Title, Date, Pertinent Pages, Etc.)*

MB	AM		Barnes, M., et al., "Localization of the Exonuclease and Polymerase Domains of *Bacillus subtilis* DNA Polymerase III," *Gene 111*:43-49, 1992.
MB	AN		Horst, J-P., et al., "*Escherichia coli* Mutator Genes," *Trends in Microbiology* 7(1):29-36, January 1999.
	AO		~~Maki, H., "Natural Mutation and Repair Mechanism," *Cell Engineering 13*(8):663-672,~~ 1994.
MB	AP		Morrison, A., et al., "Pathway Correcting DNA Replication Errors in *Saccharomyces cerevisiae*," *EMBO J. 12*(4):1467-73, April 1993.
MB	AQ		Stemmer, W., "Rapid Evolution of a Protein in *vitro* by DNA Shuffling," *Nature 370*(6488):389-91, August 4, 1994.

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